



## Letter to the Editor

**Reply to: Incidence of thyroid disease in patients with forefoot deformity**

Sir,

We read with interest the study by Tran et al. on their findings of the association of thyroid disease in people presenting with forefoot deformity [1]. We do, however, have several concerns about their findings. The authors have conflated the findings of two separate cohorts – their own clinic with a series of 350 patients and a large national database. The numbers from the large database are not clearly described. There are several issues with both methods. Was their questionnaire validated? For example, they asked 3 questions, the second of which was “Is your thyroid overactive or underactive?” If someone had a history of thyroid disease but had been rendered euthyroid by the use of medication, how would an individual answer the question – they would not currently be either over or underactive. In addition, the authors do not state what proportion of their patients answered the questionnaire – i.e. what was the response rate?

Similarly, individuals living with thyroid disease are almost never left deliberately under or overactive [2]. When they are first diagnosed, they are treated appropriately and rendered euthyroid. This may take several months, but the suggestion that this brief period of thyroid dysfunction is enough to cause collagen abnormalities great enough to cause forefoot deformities is high unlikely. Indeed, the animal studies they cite would be unethical in humans because the animals were left either hyper- or hypothyroid for prolonged periods.

In their search through ICD codes, did the authors search for hyperthyroidism? Furthermore, the authors do not describe how they defined hallux valgus or any of the other toe deformities. The incidence of hallux valgus is quoted within the study as 23%–35% depending on age and the incidence of lesser toe deformities as possibly as high as 60%. The authors do not state the denominator for the Pearldiver database to allow an indication if the recording of this data is appropriate.

The data from the clinic, showed that the mean age was 49.1 years, yet the data from the insurance data base, only lists <65. A better comparison would have been to limit their analysis to the same age group, because it is well recognised that the prevalence of foot deformity – and thyroid disease – increases with age, and is more common in women [2]. Thus their finding could just be the result of ascertainment bias. The authors also do not state where

the referrals to their clinics come from – are they self-referrals, from primary care, or referrals from other colleagues?

Could the authors explain what were the causes of secondary hypothyroidism – was this pituitary disease? Similarly, when a person reported they were hyperthyroid – was that at the time of presentation, or at some stage in the past and they had been rendered euthyroid?

The authors state that 18.6% of their cohort were on thyroid medication, but they said that 21.1% had some form of thyroid disease – thus it would seem that some were euthyroid. There seems to be a discrepancy here.

We are concerned over the conclusions reached from their data analysis.

Yours sincerely,

*The authors of "Incidence of thyroid disease in patients with forefoot deformity" declined the opportunity to respond to this letter.*

**References**

- [1] Tran SK, Carr JB, Hall MJ, Park JS, Cooper MT. Incidence of thyroid disease in patients with forefoot deformity. *Foot Ankle Surg* 2020;26:445–8.
- [2] National Institute for Health and Care Excellence. Thyroid disease: assessment and management. NG145. 2020 In [www.nice.org.uk/guidance/ng145](http://www.nice.org.uk/guidance/ng145). 2019 [Last accessed 16th June 2020].

Ketan Dhataria<sup>a,b,\*</sup>

<sup>a</sup>Diabetic Foot Clinic, Norfolk and Norwich University Hospitals NHS Foundation Trust, Norwich, UK

<sup>b</sup>Elsie Bertram Diabetes Centre, Norfolk and Norwich University Hospitals NHS Foundation Trust, Norwich, UK

David Loveday<sup>a,b</sup>

<sup>a</sup>Diabetic Foot Clinic, Norfolk and Norwich University Hospitals NHS Foundation Trust, Norwich, UK

<sup>b</sup>Department of Trauma and Orthopaedics, Norfolk and Norwich University Hospitals NHS Foundation Trust, Norwich, UK

\* Corresponding author at: Elsie Bertram Diabetes Centre, Norfolk and Norwich University Hospitals NHS Foundation Trust, Norwich, UK.

E-mail address: [ketan.dhataria@nnuh.nhs.uk](mailto:ketan.dhataria@nnuh.nhs.uk) (K. Dhataria).

Received 16 June 2020